

CLAIMS

1. A rotary machine having a rotor, a stator, and
blade rows on the rotor and stator that impart a high swirl
5 component to gases flowing through the machine so that the
denser impurities are deflected radially outwards by
centripetal action onto the inner wall of the stator of the
machine, wherein a guide surface is provided on the inner
wall of the stator along which any impurities separated by
10 the centripetal action from the main gas stream are
entrained by the main gas stream and guided to flow from the
gas intake side to the gas outlet side of the machine, the
guide surface being radially stepped to resist only reverse
flow of the separated impurities back towards the gas intake
15 side of the machine and being operative at the downstream
end of the machine to discharge the separated impurities
back into the main gas stream for the impurities to exit
from the machine with the main gas stream.

20 2. A rotary machine as claimed in claim 1, wherein
the guide surface is rotationally symmetrical about the axis
of the rotor.

25 3. A rotary machine as claimed in claim 1, wherein
the guide surface is formed by at least one groove in the
inner wall of the stator that only extends around part of
the circumference of the stator.

30 4. A rotary machine as claimed in claim 3, wherein
the groove is arranged at the lower end of the stator such
that separated impurities collect in the groove by the
action of gravity.